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| EXAMINER | |
|---|---|
| DUONG, CHRISTINE T | |
| **ART UNIT** | **PAPER NUMBER** |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/595,312 | BEMING ET AL. | |
| | Examiner | Art Unit | |
| | CHRISTINE DUONG | 2462 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *02 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *13-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

This is in response to the Applicant's arguments and amendments filed on 02 July 2009 in which claims 13-17 are currently pending.

### *Claim Rejections - 35 USC § 103*

1. Claims 13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Calvignac and Miyoshi et al. (PG Pub US 2003/0087662 A1 hereafter Miyoshi).

Regarding claim 13, APA discloses a control method for regulating the flow of data between a first transmitting radio network node and a second transmitting radio network node in a radio transmission network (figs. 1-4).

The limitation, said second transmitting radio network node receiving data from said first transmitting radio network node to be forwarded to plural user entities via an air interface (fig. 1).

The limitation, the first transmitting radio network node sends a capacity request (capacity request 19, fig. 4) to the second transmitting radio network node requesting the second transmitting radio network node for permission to send an indicated number of data units that are pending in the first transmitting radio network node (“A capacity request frame, illustrated by arrow 19, is sent by SRNC thus informing Node-B's buffer 9 about the amount of pending user data in SRNC for UE1” page 4 lines 6-8).

The limitation, the second transmitting radio network node, in response to the capacity request, sends an allocation frame (capacity allocation 20, fig. 4) to the first transmitting radio network node, said allocation frame indicating the number of data

units the first transmitting radio network node is given permission to transmit, this latter number being referred to as credits (“Next Node-B sends an allocation frame, represented by the uppermost arrow 20, indicating the amount of credits that SRNC is allowed to send for UE1. This amount is indicated in the granted credits frame field” page 4 lines 15-17).

The limitation, the second transmitting radio network node, if buffer resources for storing of data units at the second transmitting radio network node are limited for each data flow between the first and second transmitting radio network nodes (“Node-B allocates some capacity based on the free buffer space available in the buffer of UE1 in Node-B” page 4 lines 8-9).

The limitation, counting the instantaneous number of requested data units in each data flow to obtain a total number of requested data units (“the amount of pending user data in SRNC for UE1” page 4 lines 7-8 and “Credits given an individual UE with the above known "per flow" based credit assignment scheme are independent credits given another UE. It is called "per flow" based because each user data flow is independent of other flows” page 5 lines 14-16).

computing the total number of credits to be granted in each data flow by subtracting from a target buffer filling level for the total number of data flows the total number of data units currently stored in each of the buffers and the total number of credits previously given but not yet received (“Node-B allocates some capacity based on the free buffer space available in the buffer of UE1 in Node-B. Expressed in very general terms and non-complete manner the free buffer space is a buffer's maximum

memory space minus any outstanding credits. Expressed in very general terms and incomplete manner the term "outstanding credits" refers to user data that have been granted credit for transmission from SRNC to Node-B but have not yet been received by Node-B" page 4 lines 10-13).

However, APA does not explicitly disclose computing the total number of credits to be granted in each data flow by subtracting from a target buffer filling level for the total number of data flows the total number of data units currently stored in each of the buffers and the total number of credits previously given but not yet received.

Nevertheless, Calvignac discloses "The number of credits to be issued to the Dataflow ASIC for each input queue is then calculated by subtracting the filling level of the queue and the outstanding credits register for the queue from the maximum credits register for the queue" (Calvignac [0067]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to compute the total number of credits to be granted in each data flow by subtracting from a target buffer filling level for the total number of data flows the total number of data units currently stored in each of the buffers and the total number of credits previously given but not yet received because it will allow "credit generation logic for managing the flow of dispatch messages "(Calvignac [0067]).

In addition, APA, Calvignac discloses everything claimed as applied above. However, APA, Calvignac does not explicitly disclose distributing the total number of credits proportionally to radio channel qualities indicated by said user entities.

Nevertheless, Miyoshi discloses "HDR is a communication method whereby a base station performs scheduling for allocating communication resources to communication terminals by time division, and also sets a transmission rate for each communication terminal according to the downlink channel quality" (Miyoshi [0003]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to distribute the total number of credits proportionally to radio channel qualities indicated by said respective user entities because it will allow "for increasing the transmission efficiency" (Miyoshi [0003]).

Regarding claim 14, APA, Calvignac, Miyoshi disclose everything claimed as applied above (see claim 13). However, APA does not explicitly disclose limiting the total sum of user data in all data streams to a desired value less than or equal to the total requested number of data units.

Nevertheless, Calvignac discloses "the maximum credit registers specify the maximum number of credits to be issued for transfer of frames into each input queue" (Calvignac [0067]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to limit the total sum of user data in all data streams to a desired value less than or equal to the total requested number of data units because it will allow "credit generation logic for managing the flow of dispatch messages "(Calvignac [0067]).

2. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Miyoshi.

Regarding claim 15, APA discloses a control method for regulating the flow of data between a first transmitting radio network node and a second transmitting radio network node in a radio transmission network (figs. 1-4).

The limitation, said second transmitting radio network node receiving data from said first transmitting radio network node to be forwarded to plural user entities via an air interface (fig. 1).

The limitation, the first transmitting radio network node sends a capacity request (capacity request 19, fig. 4) to the second transmitting radio network node requesting the second transmitting radio network node for permission to send an indicated number of data units that are pending in the first transmitting radio network node ("A capacity request frame, illustrated by arrow 19, is sent by SRNC thus informing Node-B's buffer 9 about the amount of pending user data in SRNC for UE1" page 4 lines 6-8).

The limitation, the second transmitting radio network node, in response to the capacity request, sends an allocation frame (capacity allocation 20, fig. 4) to the first transmitting radio network node, said allocation frame indicating the number of data units the first transmitting radio network node is given permission to transmit, this latter number being referred to as credits ("Next Node-B sends an allocation frame, represented by the uppermost arrow 20, indicating the amount of credits that SRNC is allowed to send for UE1. This amount is indicated in the granted credits frame field" page 4 lines 15-17).

However, APA does not explicitly disclose distributing the number of credits given by the second transmitting radio network node proportionally to the radio channel

qualities indicated by the respective user entities to which the second transmitting radio network node is scheduling radio transmission of data units.

Nevertheless, Miyoshi discloses " HDR is a communication method whereby a base station performs scheduling for allocating communication resources to communication terminals by time division, and also sets a transmission rate for each communication terminal according to the downlink channel quality" (Miyoshi [0003]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to distribute the number of credits given by the second transmitting radio network node proportionally to the radio channel qualities indicated by the respective user entities to which the second transmitting radio network node is scheduling radio transmission of data units because it will allow "for increasing the transmission efficiency" (Miyoshi [0003]).

Regarding claim 16, APA discloses a radio network node for regulating the flow of data from a transmitting node (figs. 1-4).

The limitation, a buffering resource (fig. 2).

The limitation, a capacity allocation device for allocating individual amounts of user data to individual user entities ("A capacity request frame, illustrated by arrow 19, is sent by SRNC thus informing Node-B's buffer 9 about the amount of pending user data in SRNC for UE1" page 4 lines 6-8).

The limitation, a flow control protocol and a scheduler (figs. 1-4).

The limitation, the capacity allocation device comprises a counter for keeping a running count of the instantaneous number of outstanding credits, outstanding credits

being defined as the number of data units that the allocation device has permitted the transmitting node to send, although the corresponding number of data units has not yet arrived at the radio network node (“the free buffer space is a buffer’s maximum memory space minus any outstanding credits … outstanding credits refers to user data that have been granted credit for transmission from SRNC to Node-B but have not yet been received by Node-B” page 4 lines 11-14 and “Credits given an individual UE with the above known "per flow" based credit assignment scheme are independent credits given another UE. It is called "per flow" based because each user data flow is independent of other flows” page 5 lines 14-16).

However, APA does not explicitly disclose a distribution device adapted to distribute the total number of credits given by the radio network node proportionally to radio channel qualities indicated by said respective user entities to which the scheduler is scheduling radio transmission of data units.

Nevertheless, Miyoshi discloses " HDR is a communication method whereby a base station performs scheduling for allocating communication resources to communication terminals by time division, and also sets a transmission rate for each communication terminal according to the downlink channel quality” (Miyoshi [0003]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have a distribution device adapted to distribute the total number of credits given by the radio network node proportionally to radio channel qualities indicated by said respective user entities to which the scheduler is

scheduling radio transmission of data units because it will allow “for increasing the transmission efficiency" (Miyoshi [0003]).

Regarding claim 17, APA, Miyoshi disclose everything claimed as applied above (see claim 16). In addition, APA discloses the capacity allocation device comprises a counter for keeping a running count of user data pending in the transmitting node (“the amount of pending user data in SRNC for UE1” page 4 lines 7-8).

***Response to Arguments***

Previous minor informality objection to claims 10, 12, 13, 15 are withdrawn in view of Applicant's amendment.

Applicant's arguments have been fully considered but they are not persuasive.

Applicants have argued regarding claim 13 that “setting the transmission rate for each communication terminal according to the downlink channel quality experienced by each such terminal does not limit the transmission rate that can be set for other terminals; i.e., the transmission rate set for one communication terminal according to HDR does not limit the transmission rate that can be set for another communication terminal” (page 6).

In response to Applicants’ argument, the examiner respectfully disagrees. Miyoshi discloses “HDR is a communication method whereby a base station performs scheduling for allocating communication resources to communication terminals by time division, and also sets a transmission rate for each communication terminal according to the downlink channel quality” (Miyoshi [0003]) and “Based on the DRC signal transmitted from each communication terminal, the base station sets a transmission rate

for each communication terminal, and sends a signal to each communication terminal via a control channel indicating communication resource allocation to each communication terminal" (Miyoshi [0006]). This shows that data is sent proportionally to channel quality for each terminal. Therefore, Miyoshi discloses distributing the total number of credits proportionally to radio channel qualities indicated by said user entities.

3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "granting more transmission credits to one entity reduces, proportionally, the number that can be granted to another entity") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTINE DUONG whose telephone number is (571)270-1664. The examiner can normally be reached on Monday - Friday: 830 AM-6 PM EST with first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Seema S. Rao/
Supervisory Patent Examiner, Art Unit 2462

/Christine Duong/

Examiner, Art Unit 2462
10/15/2009